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OMEGABOND[®] OB-400

HIGH TEMPERATURE AIR SET CEMENT



INSTRUCTION
SHEET

M1238-1210

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GENERAL DESCRIPTION

The OMEGABOND[®] OB-400 High Temperature Air Cement is a sodium silicate base, one-part ceramic cement which has many exceptional characteristics including:

- Resists temperatures to 1427°C (2600°F)
- Resists oil, solvent and most acids (except hydrofluoric)
- Heat conductive and thermal shock resistant
- Excellent electrical insulator
- Adheres to metals, ceramics, glass, porcelain and most other surfaces
- Excellent mechanical bonding characteristics
- Ceramic-like body

OMEGA's OB-400 cement is an electrical refractory cement used for coating resistors, coils, electric heating elements, furnaces, and also for embedding resistance wire. It replaces other insulating materials such as varnish, enamel or mica.

HANDLING INFORMATION

CAUTION

- Avoid prolonged breathing of vapors-work in well-ventilated area
- Protect skin against contamination
- Protect eyes against contamination
- Do not take internally

OMEGABOND[®] 400 Powder is a harmful dust. Avoid breathing dust by using respirators. Avoid contact with eyes or skin by wearing gloves and goggles or a face shield. Wash thoroughly with soap and water after handling. Keep containers closed.

SHELF LIFE

OMEGABOND[®] 400 Powder has a shelf life of (6) months when stored in unopened, tightly sealed containers in a dry location at 21°C (70°F).

SOLVENT

A 10% caustic or alkaline solution such as 10% NaOH (Sodium Hydroxide) will break down the OB-400 after it has cured. However, care should be exercised as far as the compatibility of the caustic solution with any other components involved in the application, such as the material or surface that the cured cement has been applied to.

DIRECTIONS FOR USE

OMEGABOND[®] OB-400 Cement is a one-part cement and is supplied as a powder. Just mix the powder with water to a smooth, uniform consistency. Avoid using excess liquids as this will reduce mechanical strength, increase shrinkage and delay the set time. Surfaces to which the cement will be

applied should be clean and free of dirt or grease. Apply several coats where heavier layers are desired, allowing each coat to dry before application of the next coat. Do not apply OMEGABOND 400 cement in thickness greater than 1/4". OMEGABOND 400 cement can be applied by brushing, dipping and spraying.

Porous substrates should be dampened with OMEGABOND[®] Thinning Liquid (Part No. OB-TL), prior to application of the mixed cement.

CURING

OMEGA's OB-400 cures at room temperature by air drying in 18-24 hours, depending upon thickness and consistency. Cure time can be accelerated by low temperature oven drying at 82°C (180°F). If the cement is to be exposed to elevated temperatures, cure for 18-24 hours at ambient temperature, then oven dry for 4 hours at 82°C (180°F) and for an additional 4 hours at 104°C (220°F). This helps to prevent flaking and chipping.

PHYSICAL PROPERTIES*

Maximum Service Temperature:	1427°C (2600°F)
Thermal Conductivity:	11 Btu-in/sq.ft./-hr-°F
Color:	Tan to gray
Coefficient of Thermal Expansion:	13.0 x 10 ⁻⁶ in/in°F
Dielectric Constant:	3.4-4.5
Dielectric Strength:	
At 21°C (70°F):	12.5 to 51.0 volts/mil
At 399°C (750°F):	≤15.0 volts/mil
At 801°C (1475°F):	≤1.3 volts/mil
Compressive Strength:	3300 PSI
Tensile Strength:	325 PSI
Shear Strength:	375 PSI
Volume Resistivity:	
At 21°C (70°F):	10 ⁸ -10 ⁹ ohm-cm
At 399°C (750°F):	10 ⁵ -10 ⁶ ohm-cm
At 801°C (1475°F):	10 ³ -10 ⁴ ohm-cm

*Determined under laboratory conditions using applicable ASTM procedures. Actual field data may vary Do not use Physical Properties for specifications.

NOTE

The Material Safety Data Sheet (MSDS) for the OMEGA[®] OB-400 cement is shipped with the product. Additional copies can be obtained by contacting OMEGA Engineering and asking for MSDS-0137.



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WARNING: These products are not designed for use in, and should not be used for, human applications.



WARRANTY/DISCLAIMER

OMEGA ENGINEERING, INC. warrants this unit to be free of defects in materials and workmanship for a period of **13 months** from date of purchase. OMEGA's WARRANTY adds an additional one (1) month grace period to the normal **one (1) year product warranty** to cover handling and shipping time. This ensures that OMEGA's customers receive maximum coverage on each product.

If the unit malfunctions, it must be returned to the factory for evaluation. OMEGA's Customer Service Department will issue an Authorized Return (AR) number immediately upon phone or written request. Upon examination by OMEGA, if the unit is found to be defective, it will be repaired or replaced at no charge. OMEGA's WARRANTY does not apply to defects resulting from any action of the purchaser, including but not limited to mishandling, improper interfacing, operation outside of design limits, improper repair, or unauthorized modification. This WARRANTY is VOID if the unit shows evidence of having been tampered with or shows evidence of having been damaged as a result of excessive corrosion; or current, heat, moisture or vibration; improper specification; misapplication; misuse or other operating conditions outside of OMEGA's control. Components in which wear is not warranted, include but are not limited to contact points, fuses, and triacs.

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CONDITIONS: Equipment sold by OMEGA is not intended to be used, nor shall it be used: (1) as a "Basic Component" under 10 CFR 21 (NRC), used in or with any nuclear installation or activity; or (2) in medical applications or used on humans. Should any Product(s) be used in or with any nuclear installation or activity, medical application, used on humans, or misused in any way, OMEGA assumes no responsibility as set forth in our basic WARRANTY/DISCLAIMER language, and, additionally, purchaser will indemnify OMEGA and hold OMEGA harmless from any liability or damage whatsoever arising out of the use of the Product(s) in such a manner.

RETURN REQUESTS / INQUIRIES

Direct all warranty and repair requests/inquiries to the OMEGA Customer Service Department. BEFORE RETURNING ANY PRODUCT(S) TO OMEGA, PURCHASER MUST OBTAIN AN AUTHORIZED RETURN (AR) NUMBER FROM OMEGA'S CUSTOMER SERVICE DEPARTMENT (IN ORDER TO AVOID PROCESSING DELAYS). The assigned AR number should then be marked on the outside of the return package and on any correspondence.

The purchaser is responsible for shipping charges, freight, insurance and proper packaging to prevent breakage in transit.

FOR **WARRANTY** RETURNS, please have the following information available BEFORE contacting OMEGA:

1. Purchase Order number under which the product was PURCHASED,
2. Model and serial number of the product under warranty, and
3. Repair instructions and/or specific problems relative to the product.

FOR **NON-WARRANTY** REPAIRS, consult OMEGA for current repair charges. Have the following information available BEFORE contacting OMEGA:

1. Purchase Order number to cover the COST of the repair,
2. Model and serial number of the product, and
3. Repair instructions and/or specific problems relative to the product.

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